

# BISCO® Silicones

## Data Sheet



## BISCO® L3-A

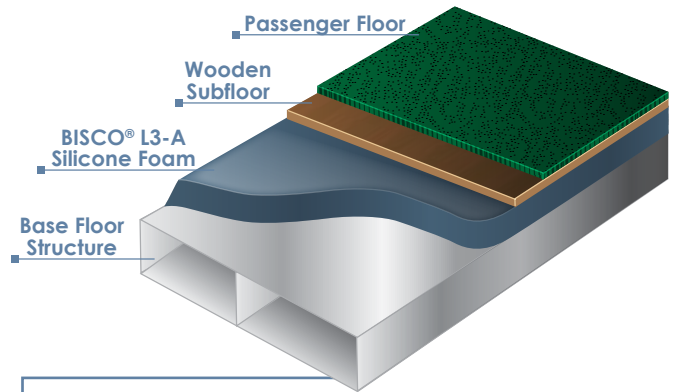
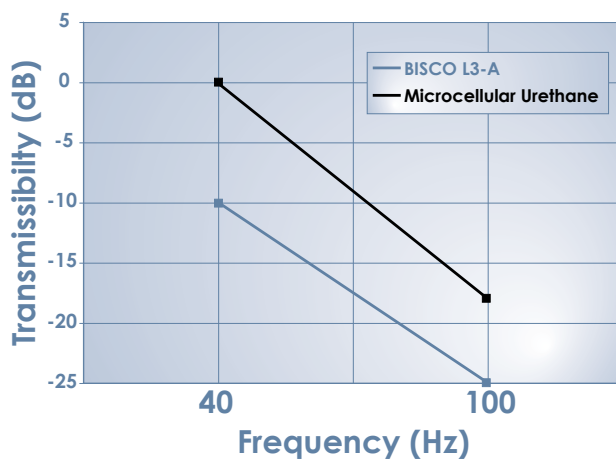
BISCO® L3-A silicone foams are developed specifically to meet the unique performance requirements of railcar flooring systems. By consistently demonstrating low stiffness and excellent elasticity, BISCO L3-A will ensure maximum vibration isolation properties under all travel conditions.

### Reduced Vibration, Quieter Cabins

With a dynamic stiffness significantly lower than competitive foams, BISCO L3-A prevents vibration transfer to the interior cabin. The superior mechanical loss factor reduces noise further by dissipating 73% more energy than alternative materials.

### Superior Durability, Less Maintenance

When exposed to stresses such as vibration, humidity, and extreme temperatures, BISCO L3-A will exhibit unmatched stress relaxation performance when compared to other foam polymers such as urethane, Neoprene and melamine. With less than one percent compression set, BISCO L3-A significantly reduces the need for costly refurbishments over a vehicle's life-span.



BISCO L3-A foam isolates the passenger floor and subfloor layers from track vibrations that are channeled through the car's base floor structure

### Enhanced Flame Resistance, Improved Safety

BISCO L3-A silicone foams allow railcar designers to satisfy the highest levels of safety as mandated by British BS 6853 (Cat 1a), French NF F 16-101 (M1 F1), and U.S. NFPA 130 safety standards.

### Lower Weights, Lower Costs

BISCO L3-A silicone foam is 25% lighter than competitive urethane or silicone foams. The reduced weight will improve efficiency and costs for railway operators.

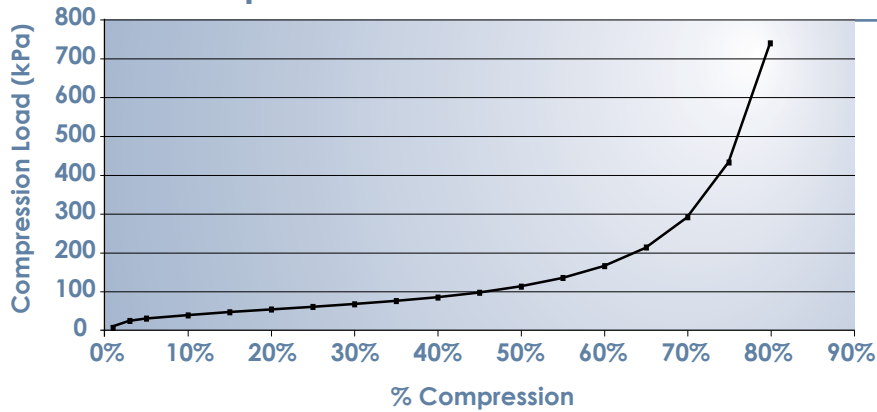
### Improved Vibration Isolation

At vibration frequencies of 40Hz, leading microcellular polyurethane solutions allow more than 10% of vibration energy to transfer through railcar floors (-0.1 dB transmissibility). BISCO L3-A isolates greater than 99.9% of vibration energy (-10dB). As frequencies increase up to 100Hz or beyond, BISCO L3-A continues to reduce vibration energy transfer by attaining transmissibility levels of -25dB or better.

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### BISCO® L3-A Silicone Foams Compression Load Deflection Curve



Indicates load force supported by the material in relation to the percent compression of the material's original thickness. Values are reported in kilopascals.

### BISCO® L3-A Typical Properties

	PROPERTY	TEST METHOD	TYPICAL VALUE
PHYSICAL	Color		Blue Streak
	Thickness, mm (inches)		10.0 - 16.0 (0.394 - 0.630)
	Thickness Tolerance		+/- 15%
	Standard Width, mm (inches)		914 (36)
	Density, kg/m <sup>3</sup> (lb./ft <sup>3</sup> )	ASTM D 1056	232 (14.5)
	Compression Force Deflection, kPa (psi)	ASTM D 1056, force load measured @ 25% deflection	36.20 (5.25)
	Compression Set, % maximum	ASTM D 1056, Test D @ 70°C (158°F), 22 hrs. ASTM D 1056, Test D @ 100°C (212°F), 22 hrs.	< 1% < 5%
VIBRATION	Storage Modulus, MPa (psi) @ 40Hz	Rogers Internal, based on DIN 53513	0.33 (48)
	@ 100Hz	Rogers Internal, based on DIN 53513	0.51 (74)
	Mechanical Loss Factor	Rogers Internal, based on DIN 53513	0.40
	Dynamic Stiffness, N/m (lb-f/in) @ 40Hz	Rogers Internal, based on DIN 53513	5201 (29.6)
	@ 100 Hz	Rogers Internal, based on DIN 53513	7994 (45.6)
	Elongation, % minimum	ASTM D 412	40%
FLAMMABILITY SMOKE TOXICITY	Tensile Strength, minimum kPa (psi)	ASTM D 412	172 (25)
	NF F 16-101	NF X 10-702, NF X 70-100, EN/IEC 60695-2-11, ISO 4589-2	M1 F1
	BS 6853: Table 1	BS 476-7, Annex B (NF X 70-100), Annex D	Cat 1a
	NFPA 130	ASTM E 162, ASTM E 662, ASTM C 1166, SMP-800C	Pass

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